DOCUMENT RESUME

ED 080 130 LI 004 435

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TITLE	Detroit MEDLINE Consortium; An Interim Report.
INSTITUTION	Kentucky, Ohio, Michigan Regional Medical Library, Detroit, Mich.
SPONS AGENCY	National Library of Medicine (DHEW), Bethesda, Md.
PUB DATE	Jul 73
NOTE	18p.; (3 References); Papers and Reports, No. 14
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Bibliographic Citations; Consortia; Dentists; *Hospitals; Information Needs; *Information Retrieval; Information Services; *Institution Libraries; *On Line Systems; Physicians
IDENTIFIERS	MEDLINE

ABSTRACT

The Detroit MEDLINE Consortium is an experimental pilot project which is intended to extend use of the on line retrieval system to the hospital environment. The consortium was initiated to increase the capacity for bibliographic information retrieval supportive of the delivery of patient care in the hospital environment. Secondarily, it addresses itself to the information needs of the dentist as manifested in both institutional and non-institutional relationships. Both purposes address themselves to the extension of MEDLINE services at the local or "Basic Unit" level as the hospital is now termed, and to the needs of the health practitioner in his clinical setting. This extension, conceptually, was possible through the introduction of MEDLINE into the hospital environment with the consortium arrangement as an experimental methodology for such extension. The data and observations in this report help to identify the members of the consortium, and provide a rationale for their selection for this experiment. The broad outlines of the selection required, 1) involvement with dentistry, 2) diversity of services and teaching programs, 3) adequate libraries, 4) a history of community services, 5) an immediate capability for initiating MEDLINE service, and 6) an acceptance of the consortium concept. The report also contains a chronology of the development of the consortium. (Author/SJ)

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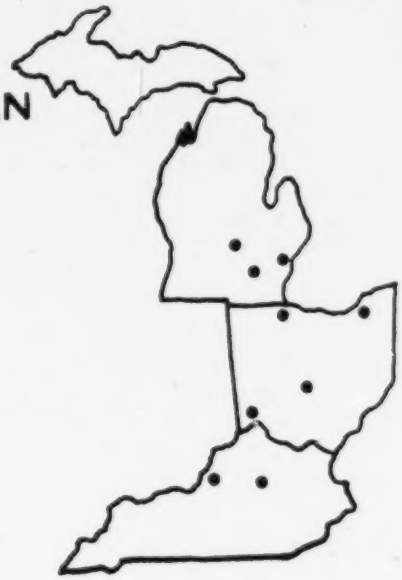

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PAPERS AND REPORTS, NO. 14

Detroit MEDLINE Consortium: an interim report.*

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LI 004 485

*This publication is produced through financial support under Contract No. NIH 71-4711, National Library of Medicine, National Institutes of Health, Department of Health, Education and Welfare.

Detroit
July 1973

INTRODUCTION

MEDLINE was introduced in October, 1971. By January, 1973, one hundred forty-two institutions were active participants in offering this on-line computerized bibliographic service. For the fourth quarter of 1972, 32,299 on-line searches had been completed, 10,996 off-line prints requested, and 7,074.8 hours of connect time utilized at an average of 16.5 minutes per search.(1) The overwhelming response to the new service these data reflect is adequate proof of its acceptance by the medical library community. This acceptance, coupled with the rapidity of MEDLINE development at the national level, placed severe time constraints on the directors of regional medical libraries for implementing its extension. They were faced with simultaneous tasks of developing policies and procedures for initiating and regularizing MEDLINE as a regional service, and formulating plans for its regional extension. Each task necessarily was ordered to the priorities of the developing national biomedical communications network, and restricted by the technological capacities of the MEDLINE system. Like most pioneer endeavors, it required traversing uncharted territory.

The initial developmental phase of MEDLINE service was accomplished rapidly in Region V, the Kentucky-Ohio-Michigan Regional Medical Library (KOMRML) area, as attested by the evidence of its documentation. By mid-1972 a regional procedure, report forms, service announcements, and a working paper had been produced.(2) Nine of its ten participating libraries had implemented service, and training classes for hospital librarians were being conducted to enable them to pre-formulate MEDLINE searches.

Although this first phase of MEDLINE development to the major medical education centers was thus accomplished, plans for its regionalized extension to the hospital environment as yet had not been formulated. There were no established national guidelines to which to respond. National Library of Medicine had indicated only that extension to the hospital environment was planned as Phase II development in 1973-74. Technological limitations in the developing network initially projected a maximum expansion to 200 terminals and a load capacity of forty simultaneous users by the end of 1973. Present developments have altered these estimates but at the time the limitations presented a challenge for network development in KOMRML. Ten MEDLINE terminals were operational by July, 1972 in all but one of the major resource libraries of the region. The national allocation from NLM provided for fifteen additional terminals for the three-state region.

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(1) NLM Library Network/MED LARS Technical Bulletin, No. 5, Jan. 1973, p.12.

(2) These documents can be secured from the KOMRML Central Office, Wayne State University, Detroit, Michigan 48202.

The obvious next requirement was to extend the use of MEDLINE to the hospital environment. Briefly stated, the tentative plan called for a consortium of MEDLINE installations sharing the computer time normally available to one user. In effect this would multiply the number of MEDLINE access points in direct proportion to the number of participants in each consortium. An experimental pilot project was proposed for the Detroit area. It became a reality in what for lack of a better name can be identified as "The Detroit MEDLINE Consortium."

COMPOSITION OF THE CONSORTIUM

The purpose of the consortium is best expressed in the supporting statements that accompanied the original Memorandum of Understanding. In summary, the consortium was initiated to increase the capacity for bibliographic information retrieval supportive of the delivery of patient care in the hospital environment. Secondarily, it addressed itself to the information needs of the dentist as manifest in both institutional and non-institutional relationships. Both purposes address themselves to the extension of MEDLINE services at the local or "Basic Unit" level as the hospital is now termed, and to the needs of the health practitioner in his clinical setting. This extension, conceptually, was possible through the introduction of MEDLINE into the hospital environment with the consortium arrangement as an experimental methodology for such extension. It is the viability of the method that must be proven; the first and second purposes need no additional justification.

The data and observations that follow will help to identify the members of the Consortium, and provide a rationale for their selection for this experiment. The broad outlines of the selection required, 1) involvement with dentistry, 2) diversity of services and teaching programs, 3) adequate libraries, 4) a history of community services, 5) an immediate capability for initiating MEDLINE service, 6) an acceptance of the consortium concept.

Library Capabilities and Programs Served. Table I summarizes the "vital" statistics of the consortium member libraries. Of the accreditation approvals listed in the American Hospital Association guide issue, the consortium members collectively are accredited for all programs except those emanating from the American Osteopathic Association. Again, collectively these institutions maintain all the clinical facilities designated by AHA except three: burn care units, inpatient rehabilitation services, and psychiatric home care. These institutions employ over 13.000 individuals.

Since these institutions share appointments of physicians and dentists, it is not possible to make an accurate count of the number of physicians who are represented within the consortium, but it probably approaches a fifth of metropolitan Detroit's physician population.

TABLE I

Description of Consortium Member Libraries

Institution	Personnel		Resources		
	Prof.	Non-Prof.	Books	Period.	Subscr.
Harper	2	3	11,000	11,468	706
Henry Ford	3	5	12,850	28,500	900
Sinai	3	3	7,320	8,628	408
Wm. Beaumont	1	4	2,525	4,485	307
U. of Detroit	3	3	10,074	10,833	390
Total	12	18	43,769	63,914	2,711

The consortium members have heavy investments in educational programs. They either have schools or departments of paramedical education in their own institutions or are affiliated with all the institutions in the area which have health care educational programs. All the internships and 19 residency programs approved by AMA are represented in the consortium. (See Table 2.) Although no data was collected on the amount or kind of research supported by the consortium institutions, because of the affiliations and the clinical resources, the consortium members support varied programs.

There is no way to summarize simply the facilities and resources that are represented within this MEDLINE consortium. Some observations can, however, be made which are relevant to the testing of MEDLINE capability. First, the large number of health professionals within these institutions should test the adequacy of the data base. Second, the consortium members are, obviously, large institutions which only a large metropolitan area could support. In this respect, the evaluation of the use of MEDLINE for smaller, less complex institutions will be difficult to extrapolate. Third, because of the interrelatedness of the staff of these institutions and because of the many affiliations, the influence of a good citation retrieval service will extend beyond the immediate institutional environments.

CONSORTIUM MEDICAL SCHOOL AFFILIATIONS, INTERNSHIPS AND RESIDENCIES

	H	HF	S	WB
Medical School Affiliations:				
Wayne State University	X		X	X
University of Michigan		X		
Internships:				
Number	24	34	23	27
Rotating	X	X	X	X
Straight	X	X	X	X
Internal Medicine	X	X	X	X
Surgery	X	X	X	X
Obstetrics-Gynecology	X		X	X
Pathology		X		
Oral Surgery		X	X	?
Residencies:				
Number	45	312	85	100
Anesthesiology		X	X	
Dermatology	X	X		
Internal Medicine	X	X	X	X
Neurological Surgery	X	X		
Neurology	X	X		
Obstetrics-Gynecology	X	X	X	X
Ophthalmology	X	X	X	
Orthopedic Surgery	X	X		X
Oral Surgery		X	X	X
Otolaryngology	X	X		
Pathology	X	X	X	X
Pediatric Allergy		X		
Pediatrics		X		X
Plastic Surgery	X	X	X	
Psychiatry		X	X	
Radiology	X	X	X	X
Surgery	X	X	X	X
Thoracic Surgery		X		
Urology	X	X	X	X

Community Service. Each of the consortium members has a history of community consciousness that is particularly revealed in their membership in the Metropolitan Detroit Medical Library Group, a co-operative association of health science libraries. The extent to which such an organization is functional without listing a history of its accomplishments can be illustrated by the extent to which consortium members participate in one of its functions--document delivery. In addition, to indicating the extent of document delivery to member institutions Table 3 below illustrates the extent of dependence on the regional structure, and serves as an index of community service.

TABLE 3

Interlibrary Loan Activity 1972

Institution	Total Borrowing	Borrowing (KOMRML)	Lending (MDMLG)
Harper	513	430	2,294
Henry Ford	1,416	1,091	389
Sinai	1,108	610	1,434
Wm. Beaumont	1,989	747	723
U. of Detroit	244	208	593
	5,270	3,085	5,433

Investment Capability. This aspect requires no elaboration. The five institutions immediately and readily underwrote the financial obligation, necessary equipment and travel costs for training, and were sufficiently perceptive in anticipating the possibility of added service costs, which they were prepared to accept.

Willingness to Function as a Consortium. With their prior record of co-operative effort this aspect presented no problem. A common Memorandum of Understanding, signed in their names by the University of Detroit, was readily agreed to and accepted. It should be added that enthusiasm for MEDLINE was an overriding attraction that permitted such ready acceptance. Each institution accepted with this the experimental nature of the consortium, and understood that policies and procedures involved would be developed as part of an on-going process.

CHRONOLOGY OF DEVELOPMENT

The evolution of the consortium began with a letter of intent from the University of Detroit Dental Center Library to NLM in March, 1972. In keeping with NLM policies, the request was referred to the Director of KOMRML for further action. Parenthetically it must be noted that while primary responsibility for regional network development rests with the RML, the National Library of Medicine had reservations about the extent of MEDLINE utilization in a school of dentistry. This was predicated on the limited dental content of the data base (45 dental journals). With the then limited expansion potential of MEDLINE the validity of the concern cannot be disputed. The expressed interest of one library was, however, an overriding concern for which a solution was sought and from which, as a possible solution, the consortium concept emerged.

Following the necessary letters and conversations attending this initial stage, the director of KOMRML approached the administrators and librarians of four metropolitan Detroit hospitals, Harper, Henry Ford, Sinai, and William Beaumont. Each agreed to accept MEDLINE on "shared time" arrangement as partners in a consortium with the University of Detroit functioning as its co-ordinator.

In August, 1972 a Memorandum of Understanding was submitted for the consortium by U. of D. This document contained the contractual agreement with NLM for MEDLINE access and a general outline of the objectives and proposed operating policies and procedures of the consortium. (3)

By December 5th two organizational meetings had been held, four of the five institutions (U. of D., Harper, Henry Ford, and William Beaumont) had sent personnel to Bethesda for the required three-week training, and one (Henry Ford) had installed a terminal. A third meeting was held in February. By that time four members had initiated service and had at least one full month of actual experience with the bibliographic service. The fifth institution (Sinai) planned to initiate service in July, and had arranged a March date for MEDLINE training. A fourth meeting of the consortium was held in April.

The task facing the librarians in this consortium is to incorporate an "instrument" into their libraries which has mechanical and intellectual constraints in its use. Further, the privilege of having access to the data base has to conform to regulations outside the control of the librarians. The first thing that should be noted is that the librarian members of the consortium have been practitioners in the Detroit area for many more years than some of them might like to

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(3) Copies of the Memorandum of Understanding can be obtained from the University of Detroit School of Dentistry Library, Detroit 48207.

admit. The librarians have known each other and the institutions they represent from many different perspectives. The introduction of MEDLINE, however, required that the librarians share expertise and explain their environment in ways they had not had to do before. In general the discussions of the nature of the consortium as applicable to MEDLINE could be summarized into four general areas: (i) community commitments, (ii) involvement in regional development, (iii) the experimental and innovative aspects of the consortium, and (iv) the necessity for data compilations for both evaluation purposes and to reflect capabilities and limitations of MEDLINE as applied to the clinical environment.

Since the consortium members have within their doors such a large component of health care professionals, the discussions of the extension of the service has received only cursory attention. Before additional community service could be considered some understanding of the responsibility of fitting into a regional network had to be arrived at. Other efforts of developing a consortium have been planned or tried elsewhere in the nation. The members felt it necessary to review those efforts in relationship to their own objective and goals to determine what limitations might be placed on them in forming a viable organization. The general opinion of the members to date is that other plans reviewed for the extension of MEDLINE to clinical environment do not appear to relate to the institutional configuration of the Detroit MEDLINE consortium. This opinion reinforces the need to collect data and information on the efficacy of MEDLINE use.

One of the first problems faced by the members concerned access time. Originally it was conceived that each member of the consortium would be given a specific period of time during the week for accessing the data base. This scheduling would assure that the consortium would not use more than its share of one port to the data base. After one month's experience the consortium favored an unscheduled access to the system with an agreement that use would not exceed a 12-hour per week maximum per member or variation thereof adjusted to the size of the institution. This method of access was reinforced by statements regarding "open" access made to the trainees when they attended classes at NLM. The objections to scheduling were primarily the following limitations that it would impose (i) time constraints on the public to be served, (ii) accessing the system at peak hours when the system is unavailable for use, or when staff is unavailable.

The scheduled arrangements would result in reducing the already limited access time to a further degree. In addition, the encouragement of user interaction with the system rather than a delayed mediated service approach would foster an inefficiency that would further reduce effective access time. Conversely, "open" access would permit a flexibility in incorporating the new service into work schedules, would insure maximum effective use, and would permit patrons to be served at mutually convenient times. It was felt that simultaneous access to

the system by the five libraries would rarely occur, but means could be devised to check the frequency of such events. Although advice was sought, at the time this report is written, the National Library of Medicine has not made a statement on the access limitation by a co-operative group as the Detroit MEDLINE Consortium.

Although the members were convinced of the need to keep records of MEDLINE use, how was this to be accomplished so that significant data could be obtained without making it a burden? The Shiffman Medical Library had devised a search request form to collect information on each search to permit an evaluation on the adequacy of each search and to calculate costs. This form was suitable for recording MEDLINE use in academic environment, but it left certain aspects out which are important in a clinical setting. The members of the Consortium are in the process of altering the academic oriented search request form to suit their specific needs and at the same time try to provide data for evaluation. The expectation is that after a certain amount of experience a standard form can be devised which is acceptable for use in a clinical environment. It is recognized, however, that the objective is not to create a standard form, but rather that appropriate monitoring information be obtained. It could very well turn out that a very simplified report is all that is needed with each member devising its own form to suit patron needs.

One of the immediate constraints of the consortium was the requirement for reporting to the Regional Medical Library. The Regional Medical Library has insisted on its reporting mechanism because the computer-generated data on MEDLINE use is insufficient for evaluative purposes. Because of the open access to the data base discussed above, the question arose whether each of the members should report directly to the Regional Medical Library or should there be a summarized report for the consortium?

Another matter that has resulted in considerable discussion is what other relationship should be established among the members of the consortium other than sharing a common access to MEDLINE. For example, should the sharing of resources to document delivery be altered from previous patterns?

Although the designers of MEDLINE may have tried to develop a system to permit direct user access, the experience of the consortium is that a mediated service is necessary. Retrieving citations from any subject orientation includes a great deal of art. The members of the consortium are gaining experience in which they are learning various tricks in exploiting the MEDLINE system. Such knowledge can only be

transferred orally or in demonstration. The consortium members are looking forward to the time when they can share their intellectual expertise at their meetings rather than having to spend their time with administrative matters.

OPERATION

The short life span of the new consortium, and the fact that it is as yet not fully operational preclude definitive statements about its operation. What data are offered is at best incomplete. It may, however, suggest more questions than answers, which can also lead to progress The development of this section relies primarily on information gleaned from the "Survey" form that was distributed.

Cost. The consortium has five times the cost, except for use charges, for equivalent use by a terminal available for full-time operation. In dollar approximations the following illustrates the differences, except for use charges which can be computed at 13¢ per minute in Detroit.

	Single User	5-member consortium
Annual Equipment Rental	1,200.00	6,000.00
Annual Telephone Charges	83.60	418.00
Annual Supplies (est.)	100.00	500.00
Annual Tym-Share Minimum	144.00	720.00
Totals	1,527.60	7,638.00

There are, of course, some limited alternatives. The University of Detroit uses an ASR33 acoustic-coupled TWX unit which serves the double purpose of the TWX capacity and a MEDLINE terminal thus dividing rental costs between two functions. Equipment purchase is also a possibility if the utility of the terminal for MEDLINE applications would permit a sufficiently long amortization period. Neither approach would, however, bring consortium costs within the expense range for the single user.

Cost Recovery. The consortium members have instituted no charges for MEDLINE service, and with the exception of the University of Detroit, do not contemplate doing so. For hospitals MEDLINE is a more sophisticated continuation of a traditional service. For the University of

Detroit bibliographic searching or compilation is a new service and, with other academic institutions, it shares the necessity for cost recovery. It will institute charges after July 1 consistent with existing regional policies for such service.

Using the established regional rates for MEDLINE service ($5.00 per half hour of formulation and search time, plus actual line charges) the consortium has subsidized $335.34 in line charges and $5,315.00 for 1,063 units of search time to complete 878 searches in a three-month time period, at an estimated actual cost of $5,296.34. This is an average cost of $6.00 per search, and will be increased by $1.25 after July 1.

These observations are useful for establishing general cost figures for the consortium. It does not answer how long hospitals are prepared to subsidize the service in its new mode.

Personnel. To date no additional staff has been employed by any consortium member for MEDLINE service. Should MEDLINE utilization increase it is reasonable to expect that this will be a necessity.

MEDLINE utilization. Table 3 details the four-month productivity of the consortium. The consortium, considered as one of eleven MEDLINE access points in region V, arithmetically should produce about 9% of the total work load. It has produced 15% of all searches in the four months January through April, 1973 (See Table 4). Harper, Henry Ford and William Beaumont hospitals have been responsible for 97% of total consortium activity. By contrast, the consortium has generated only 5% of the off-line prints produced in the region in the same time period, a fact which speaks to the purposes of MEDLINE searches in the hospital environment. The average search time of about 13 minutes can be coupled with this observation.

Publics served. Table 5 shows the activity of the consortium through April 30 by category of patron served: The clinical thrust of the activity is obvious. The necessity for experimentation with and demonstration of the new service has given the "Other" category a disproportionate percentage of the activity, and it seems apparent that the dentist requires both investigation and exploitation to lead him to MEDLINE. An analysis of the actual search formulations would help to complete this picture by answering what was the subject matter of the searches. Because of the number of searches involved and because of the yet unstandardized data collecting throughout the consortium, this has not been done for this report. Such a study will be necessary for evaluation on the use of MEDLINE and to establish possible continuing education for MEDLINE librarians.

Table 4

Use of MEDLINE by Consortium Members
for four months (1973) compared to total KOMRML use

	S	OLP	Hrs.	Average
APRIL				
Harper	68		14.3	12.6
Henry Ford	33	9	8.1	14.7
University of Detroit	2		.5	15.0
William Beaumont	70	10	13.1	11.2
Total	173	19	36.0	12.5
Use by Region	1579	390	298.7	
% Use by Consortium	11	5	12	
MARCH				
Harper	56	4	15.2	16.3
Henry Ford	119	5	19.5	9.9
University of Detroit	13	5	4.1	18.9
William Beaumont	73	17	16.8	12.5
Total	261	31	55.6	12.8
Use by Region	1835	535	357.2	
% of Use by Consortium	14.2	1	15.6	
FEB.				
Harper	67	1	11.5	10.3
Henry Ford	100	10	17.8	10.7
University of Detroit	10	4	2.9	17.4
William Beaumont	58	6	16.9	17.5
Total	235	21	49.1	12.5
Use by Region	1292	355	272.7	
% of Use by Consortium	18.1	6	18.0	
JAN.				
Harper	40	1	14.4	21.6
Henry Ford	131	11	18.5	8.5
University of Detroit	5		.9	10.8
William Beaumont	33		11.8	21.5
Total	209	12	45.6	13.1
Use by Region	1198	398	252.7	
% of Use by Consortium	17.4	3	18.0	

Table 5

Categories of MEDLINE Users January through April, 1973

Patron	Searches	Search Units	Recurring
Student	20	24	
Intern/Resident	381	419	
Basic Sci./Research	8	17	24
Physician	428	472	
Dentist	23	35	
Nurse	43	82	
Other	110	127	
Totals	1,013	1,176	24

Service Increase. The increased service capability that MEDLINE provides is readily indicated by the 1972 record of manual bibliographic searches completed by two hospitals in the consortium: In 1972 Harper compiled 139; Sinai 180. If this average obtained for the four hospitals, MEDLINE will increase the citation service capacity by six times in 1973.

Operational Procedures. The consortium was formed without a model and without firm or even consistent guidelines from either NLM or the Regional Medical Library. Each institution had, therefore, to just begin. After four months of experience the four active members tried to assess their activities in a subjective way using the following outline:

1) Method of announcing MEDLINE Service.

2) Service Policy

   a) Procedures

   b) Restrictions

3) Effect on

a) Library service and work loads

b) Library personnel

c) Patron attitudes

d) Use of indexes

4) User satisfaction

5) Adequacy of the MEDLINE Data Base

6) Consortium concept

7) Consortium development

Time for assessment of these factors has been minimal.

Major effort has concentrated on establishing and regularizing MEDLINE service, however, some general opinions and reactions can be summarized.

1) Formal or informal announcements seem to have little relationship to the amount of work generated. The exception to this generalization seems to be the dentist who, because of his more isolated condition will require extensive exploitation.

2) Procedural policies and service restrictions seem to follow established library policies as they are individually applied in each consortium institution.

3) Change is evident in the effect on library service, library personnel and patron, although there is insufficient data to assess the extent of change. Generally, the use of library materials and photoduplication has increased, but apparently without a comparable increase in inter-library loan or increased dependence on the RML for resources. Library personnel have become more actively conscious of their role as information specialists and educators with the attendant necessity for the exercise of greater precision. A more positive and outgoing attitude to the library patron and his need for information has been noted. Patron attitudes seem to incline more to recognition of the librarian as a professional expert. Whether this is prompted by his ignorance of electronic technology or for more substantive reasons cannot, as yet, be determined. MEDLINE has created a greater consciousness of the place and utility of printed indexes as the complement to MEDLINE. This awareness has generated the necessity for adequate patron instruction in their use.

4) User satisfaction seems to be high, but no followup approaches have been attempted to gauge patron reaction objectively. Impressions are based on initial reactions.

5) The need for expanding the data base to include more literature pertinent to dentistry, nursing, and hospital administration is clear if full potential of the system is to be realized for institutions represented in the consortium.

6) Response to the consortium concept is in general favorable because it serves as an informal continuing education device and because it fosters co-operative group relationships.

7) Response to the organization and development of the consortium is probably best expressed in one reply that asks, "Where do we go from here?"

OBSERVATIONS AND QUESTIONS

The account of efforts and reflections of the contributors to this paper marks but a beginning. In terms of the general concerns that prompted the decision to record activities and impressions there can, however, be an attempt at summarization.

Information access and transfer within health science libraries is, directly or indirectly, for patients. The hospital or clinical environment, although involved in the functions of research and education, is primarily focused on the immediate and particular need of each patient for health care. It is to this priority that the hospital library must respond. It is further reflected as an objective of the developing biomedical communications network in its efforts to extend information services to all health care facilities. Many man-years have been expended in this attempt to equalize access to biomedical information in health care institutions regardless of size, geographic distribution or economic capability.

MEDLINE represents a technological forward leap in providing access to the existence of biomedical information. It has accelerated the information-seeking process from a matter of months to minutes. By the nature of its objective and technology the hierarchical structure inherent in instititional resource capabilities, as manifest in the document delivery network, is circumvented. This has permitted the introduction of MEDLINE into the clinical environment on a par with the largest academic medical center. This sudden event has seemed to create an ambivalence in roles for the hospital librarian in relation to the existing network structure, and for which necessary adjustments must be made.

Transcending these considerations in the introduction of MEDLINE into the hospital library environment has had a concern for its efficacy as a reference tool for improving both the librarian's role and capacities for relating to patient care. In the instance of the consortium members reaction to MEDLINE has been favorable. Accompanying this reaction is also the realization that for the first time a network service has been introduced directly into the clinical environment. They recognize from their collective experience the effort needed to effect change within a library environment, and the exponential rate at which such effort must grow in the socialization of such change. This has prompted a concern for examining and evaluating the effect of this service in their individual environments, and for its extension as a network service to the clinical, patient-oriented institution. This concern has been manifest in two efforts: 1) The recounting of their experience to date as a consortium to illustrate the advantages and disadvantages of one possible method for the extension of MEDLINE, 2) a meeting with representatives of the National Library of Medicine, and the director and staff members of the Regional Medical Library, for the purpose of examination of this limited experience by those who will have many decisions to make before MEDLINE assumes its place in the health science library with the familiarity of the photoduplication device.

The data and information based on the four-month operation of a consortium that is as yet not fully operational may be subject to the criticism that such information is premature. Certainly it is fragmentary, but two divergent views on how to extend the use of MEDLINE have been distinguished by the Detroit MEDLINE Consortium's effort. The one view which appears to be currently held by NLM is that MEDLINE is merely a commodity, or a utility. If this perspective is taken, then MEDLINE is a commercial venture. All that needs to be done is to insure the continued quality control of the data base and employing a sufficient number of telephone lines to enough computers to keep communication to and from the data base open and dependable. Use of the communication lines and the computers are to be paid for by the consumer. It is like any commodity--the producer is not concerned how much or in what manner the commodity is used just so long as the consumer pays his bills. Our present energy crisis brings this general capitalistic principle into question. We must be concerned how we deploy our energy resources and for what purposes. Analogously how our information access resources are used are also of social concern. What should be underlined with this commodity perspective of MEDLINE is that a relatively simple "newwork" organization is created. The changes within an institution that result from the use of MEDLINE are the responsibility of that institution to resolve.

The other view that the Detroit MEDLINE Consortium has brought out and which is shared by the members, is that MEDLINE is more than just a utility or a new gadget that can be added to a hospital library. It is an instrument of change that can cause disruptive consequences to the organization of the libraries in clinical environments. The problems that arise can be resolved best by extending the network concept through additional sharing of resources and intellectual competences. This requires an organization that is quite different from a complex communication network. It requires that institutions define responsibilities to each other; as examples: to share resources among institutions requires that they know what each others' resources are; if one institution agrees to serve as a backup for another in providing access to MEDLINE, then the competence to utilize the data base must be similar in quality. So long as institutions under present access restrictions must share time, then some inter-institutional arrangement must exist. What the nature of this organization should be has been perhaps an exaggerated concern of the Detroit MEDLINE Consortium, but questions have been asked by the members. Partial answers are possibly suggested in this report, but for the most part the questions asked are unanswered and it is not even yet understood whether they are legitimate questions. The experiences of the consortium members do however have a pertinence to the extension of MEDLINE into the clinical environment and to the viability of the consortium approach to MEDLINE extension. Some of these questions:

1. Are there clinical environments for which MEDLINE is not suitable? From the limited experience the conclusion seems clear that any environment that has need for Index Medicus, or AIM, could use MEDLINE profitably. In fact, hesitantly the suggestion might be made that MEDLINE access would be more suitable in many environments than the maintenance of Index Medicus files. This brings up the problem of how to deliver the documents that MEDLINE searches reveal as relevant to clinical questions. Is it a requirement that this powerful search instrument be confined only to institutions which have library collections of a certain size? This hardly promotes the idea of improving health care through better dissemination of pertinent information.

2. If a "grouping" of institutions is necessary, how is the group to administer itself and how is leadership to be developed? If a group is to work together constructively, then it must have information about its activity and accomplishments. What data must be collected, analyzed and distributed so that the group can attain an identity? Who is to bear the cost of administering such an operation?

3. If a group is to be formed to share the use of a common facility, the services from MEDLINE as a group must have quality control, but this can only be accomplished through consensus and through experience.

4. If restrictions have to be placed on a group's use of access, how are the limitations to be enforced. As a group, policies and procedures can be devised as for example the type of searches that are to be made, the hours of access, or restrictions on certain clientele, but the pressures that are placed on the library administration are often intense. Some kind of monitoring procedures would appear necessary that are dependably enforcable.

5. MEDLINE is still a dynamic system mechanically and presumably always will be intellectually; how is an institutional member of a group to keep informed? Is this an individual responsibility, or can it be a group responsibility? If it is the latter, does this place geographic limits on the formation of consortia? In this same regard, how do the users of MEDLINE keep the producers of this commodity informed of its viability and quality. Utility companies are controlled to some degree by regulatory agencies. In this era of consumerism, does a consortium form a suitable mechanism to function as a regulatory agency?

Such questions and the search for answers will serve as a preoccupation for consortium members, and those interested in the fate of this experiment. It is the hope of the Detroit MEDLINE Consortiums that in this act of sharing experiences, doubts, and some frustrations that additional efforts will be communicated by other groups or individuals. Exploring the implications of MEDLINE in the clinical setting, and the ultimate determination of the most practicable method for its extension remain, at this date, uncharted territory.